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# NPStrong

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Composition before September 2022.



**Teresa Peña**



**Ana Arriaga**



**Elmar Biernat**



**Raúl Torres**



**Alfred Stadler**



**Gernot Eichmann**



**André Torcato**



**Eduardo Ferreira**

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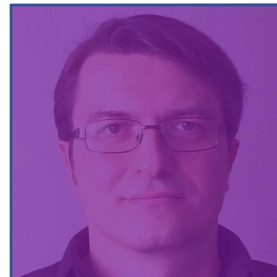
Raúl Torres



André Nunes



Alfred Stadler



Gernot Eichmann



André Torcato



Eduardo Ferreira

An outstanding researcher had an offer for a permanent position

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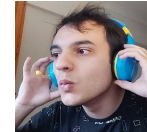
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## Highlights

One student (EF) awarded with the  
McCartor ILCAC Fellowship Award.

JLab area Universities Research Association.

TP associate members of HFHF

Helmholtz Forschungsakademie Hesse für Fair.

1 Master Thesis completed; 1 started.

1 PhD Thesis started.

2 undergraduate trainees (LIP internships).

6 talks delivered by the 3 PhD students.

7 Invited talks (3 TP, 2 GE, 1 AS, 1 EF).

2 International Meetings Organization.

International Conference on the Structure of Baryons, Baryons 2022,  
Seville

ECT\* Doctoral Training Program 2022 Hadron Physics with Functional  
Methods ECT\*, Trento.

## Outreach

EPS Science Forum@Sorbonne Université  
(TP; Org. Com. + Convener)

EPS actions IYBSSD 2022  
(TP; Sc. Adv. Com., 4th Physics Conference  
of the Portuguese Speaking Countries w/  
the support of UNESCO)

National Physics Olympiads (AS)

CERN Masterclasses (AS)

LIP Mini-School on Part.& AstroPart. Phys.  
(AS, EB)

LIP Internship Lecture (TP)

## Research

Pentaquarks

Baryon spectroscopy

Meson spectroscopy

Hadrons on the light front

Ab initio calc. for gluons

Flavor matrix elements

## Funding

1 CERN-PT project grant

1 FCT Computing grant

2 Competitive FCT

PhD Progr. grants

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Teresa Peña



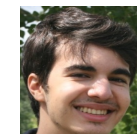
Ana Arriaga



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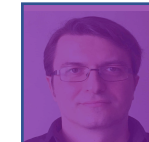
Raúl Torres



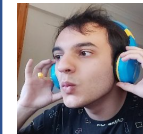
André Nunes



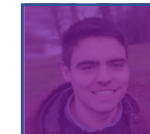
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## Research

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~~Ab initio calc. for gluons~~

~~Flavor matrix elements~~

## New in 2023

Deuteron as a six-quark state

## Planned

Hyperon form factors  
(Connection to Astrophysics  
and GSI/HADES Collaboration)

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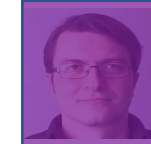
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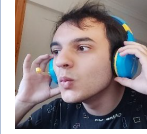
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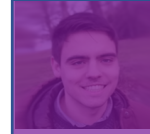
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## Strengths

Unique expertise in functional methods

Unified calcs. of hadron properties & multiquark systems from non-perturbative QCD

Complementary toolkits and skills

Intl. Recognition and Collaborations

## Opportunities

Synergies between Nuclear&Particle&Astroparticle Physics

Physics studies at IST w/ Emphasis on Project Based Learning & Individual learning paths

Access to students from two Departments with Physics Training Programs

Natural connections to Partons&QCD, Pheno, NUC-RIA groups

## Weaknesses

Reduced dimension

Average age of Senior members

Heavy Teaching & Administration load of Senior members

## Threats

Uncertainty in funding